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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,240	12/30/2003	Anurag Gupta	134736-1	8894

  

6147	7590	06/11/2007
GENERAL ELECTRIC COMPANY		
GLOBAL RESEARCH		
PATENT DOCKET RM. BLDG. K1-4A59		
NISKAYUNA, NY 12309		

  

EXAMINER	
SAN MARTIN, EDGARDO	

  

ART UNIT	PAPER NUMBER
2837	

  

MAIL DATE	DELIVERY MODE
06/11/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/750,240	GUPTA, ANURAG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Edgardo San Martin	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-69 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/30/03; 4/8/05</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 – 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanek (US 6,571,549) in view of Lee et al. (NPL titled "Preliminary Study of Oscillating Triangular Jets").

With respect to claims 1, 27, 60 and 61, Stanek teaches a device for reducing jet engine exhaust noise, comprising at least one oscillating jet (Fig.1, Items 12 and 14) coupled to an engine exhaust portion (Fig.1, Item 110), the oscillating jet comprising a nozzle with an orifice formed therein (Fig.4, Item 45), and an exhaust pipe coupled to the nozzle, wherein a flow of gas passes through the orifice and exits from the exhaust pipe, having an oscillating flow, and wherein at least a portion of the gas from the exhaust pipe mixes with engine exhaust passing through the engine exhaust portion (Figs.1 – 3, Col.3, Line 36 – Col.6, Line 32); but fails to disclose wherein the oscillating jet comprises a nozzle with a triangular shaped orifice formed therein.

On the other hand, Lee et al. teach an oscillating jet comprising a nozzle with a triangular orifice formed therein (Figs.1a and 1b, section titled "Oscillating Jet Nozzle").

It would have been obvious to a person with ordinary skill in the art at the time of the invention was made to employ the Lee et al. triangular orifice configuration with the Stanek design because it would provide an oscillating jet flow with a large oscillation amplitude and spreading angle that could operate with a lower energy loss coefficient, producing a continuous oscillation over a wider range of chamber-length over chamber-diameter ratios.

With respect to claims 2, 3, 5, 7, 8, 12 – 15, 28 – 30, 32, 34, 35, 39 – 46, 60 and 61, Stanek teaches the limitations described in the claims (Figs. 1 – 4; Col.2, Line 1 – Col.3, Line 12 and Col.3, Line 36 – Col.6, Line 23).

With respect to claims 9 – 11, 16 – 22, 24, 25, 36 – 38, 47 – 55, 57, 58, 60 and 61, Lee et al. teach the limitations described in claims (Fig.1, Table 1 and complete written content of Lee et al. document).

With respect to claims 4, 6, 31 and 33, the Examiner considers that it would have been an obvious matter of design choice to place the oscillating jet within the lip portion because it would improve the mixing of the secondary flow with the primary flow taking advantage of the swirling profile that the primary flow follows inside the lip portion.

With respect to claims 23, 26, 56 and 59, the Examiner takes official notice that it is well known in the art of jet propulsion to control the speed and temperature of the secondary flow in order to avoid the generation of Mach waves.

With respect to claims 62 – 69, the Examiner takes official notice that it is well known in the art of jet propulsion to insert combustible into the primary flow in order to create an after-burning effect that would increase the thrust of the jet engine.

***Conclusion***

2. The attached hereto PTO Form 892 lists prior art made of record that the Examiner considered it pertinent to applicant's disclosure.

***Contact Information***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edgardo San Martin whose telephone number is (571) 272-2074. The examiner can normally be reached on 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-2800 ext.37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2837

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Edgardo San Martin/

Edgardo San Martín  
Primary Examiner  
Art Unit 2837  
Class 181  
June 7, 2007